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NETWORKS OF FOREIGN AFFILIATES: EVIDENCE FROM JAPANESE MICRO-DATA

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OUTLINE

- **Objectives**
- **Literature review**
- **Data**
- **Key stylised facts**
- **Methodology & main econometric findings**
- **Conclusions**

OBJECTIVES

- Provide micro-evidence on the **investment patterns of Japanese MNEs** across countries and industries
- Explore the **structural and policy determinants of FDI** attractiveness and the role of Japanese foreign affiliates, distinguishing among three main motives:
 - Serving the local market
 - Providing goods or services within their corporate group
 - Acting as regional (or global) export platforms

LITERATURE REVIEW

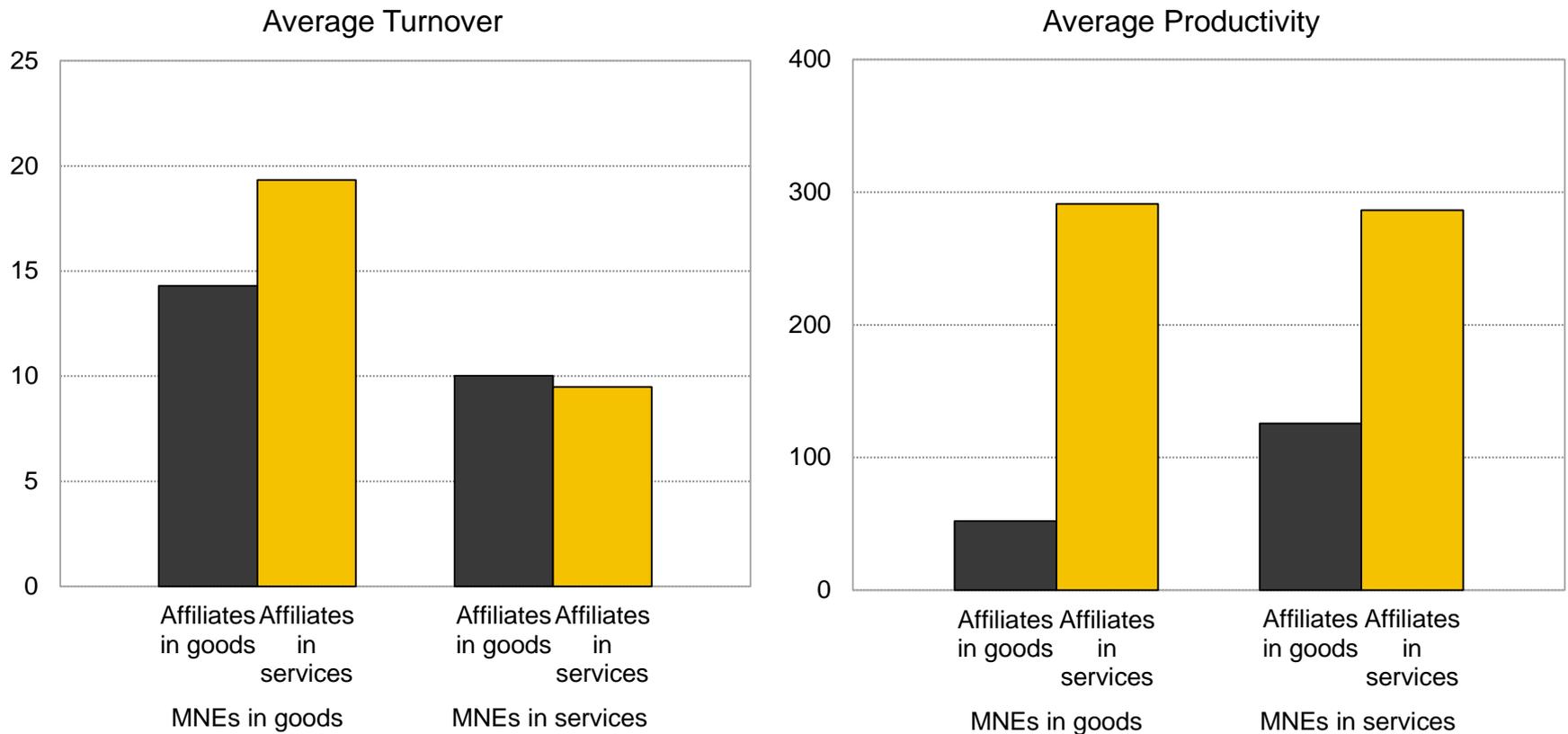
- **Literature on the main determinants of exports and FDI at the firm-level, testing the **heterogeneous firm** model**
 - Helpman, Melitz and Yeaple (2004)
- **Literature on the impact of **trade costs** on MNEs choice of FDI for local sales, intra-firm trade and export platforms**
 - Ekholm, Forslid and Markusen (2007)
- **Evidence on **Japanese micro-data** with comparisons of services and manufacturing trading firms**
 - Morikawa (2015), Wakasugi et al (2014), Tanaka (2011), Tomiura (2007), Kimura and Kiyota (2006), etc.
- **Literature on the **motives for FDI****
 - Markusen (2007), Baldwin and Obuko (2012)

DATA

- **Outward Foreign Affiliate Trade Statistics (FATS) from the **Basic Survey on Overseas Business Activities** by the Japanese Ministry of Economy, Trade and Industry (METI)**
- **The survey targets Japanese corporations from **all sectors** (except finance and real estate) that own one or more overseas affiliates**
- **Good response rate & covers wide range of topics**
- **A **unique** database**
- **We use data on both parents and foreign affiliates engaged in **services** and **manufacturing** sectors over the period 2008-2014**

INTERLINKAGES BETWEEN GOODS & SERVICES

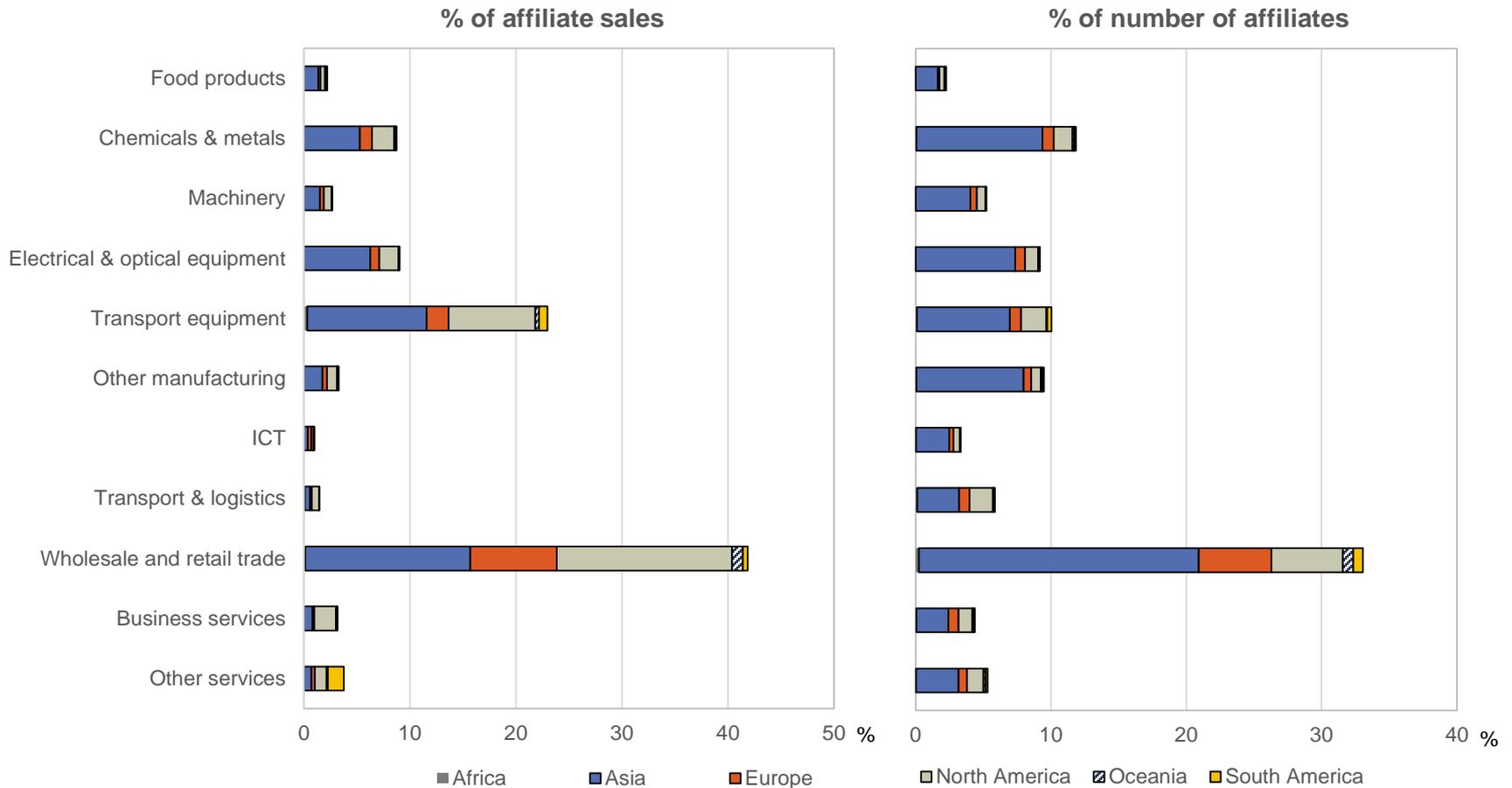
Foreign affiliate sales and labour productivity, by main activity in 2014



Note: Monetary values are expressed in constant 2013 billion YEN.
Source: Own calculations based on the micro-data from the BSOBA, Japan METI.

WHERE, WHAT, HOW MUCH, HOW MANY ?

Foreign affiliate activity by region and sector, 2014

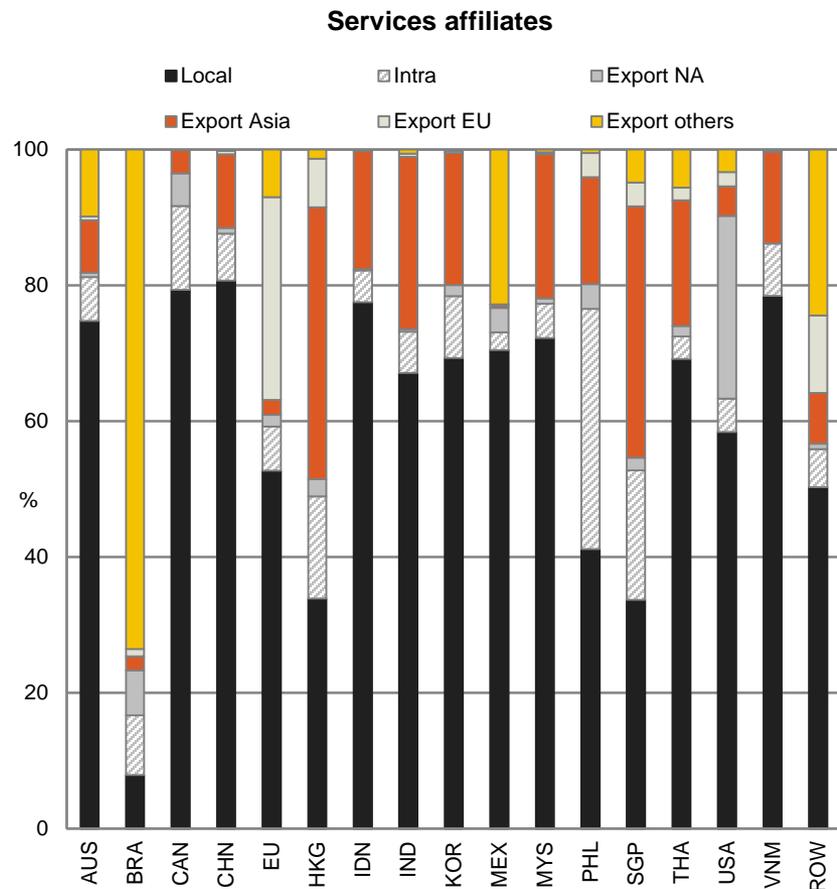


Note: The aggregate 'Other manufacturing' includes the 'Textile & apparel' and 'Wood, pulp & paper' sectors as well, while 'Other services' covers also 'Construction', 'Finance and insurance', 'Real estate and renting activities', and 'Audio-visual services' sectors.

Source: Own calculations based on the micro-data from the BSOBA, Japan METI

WHERE ARE THESE EXPORT PLATFORMS ?

Geographical breakdown of foreign affiliate sales, 2014, %



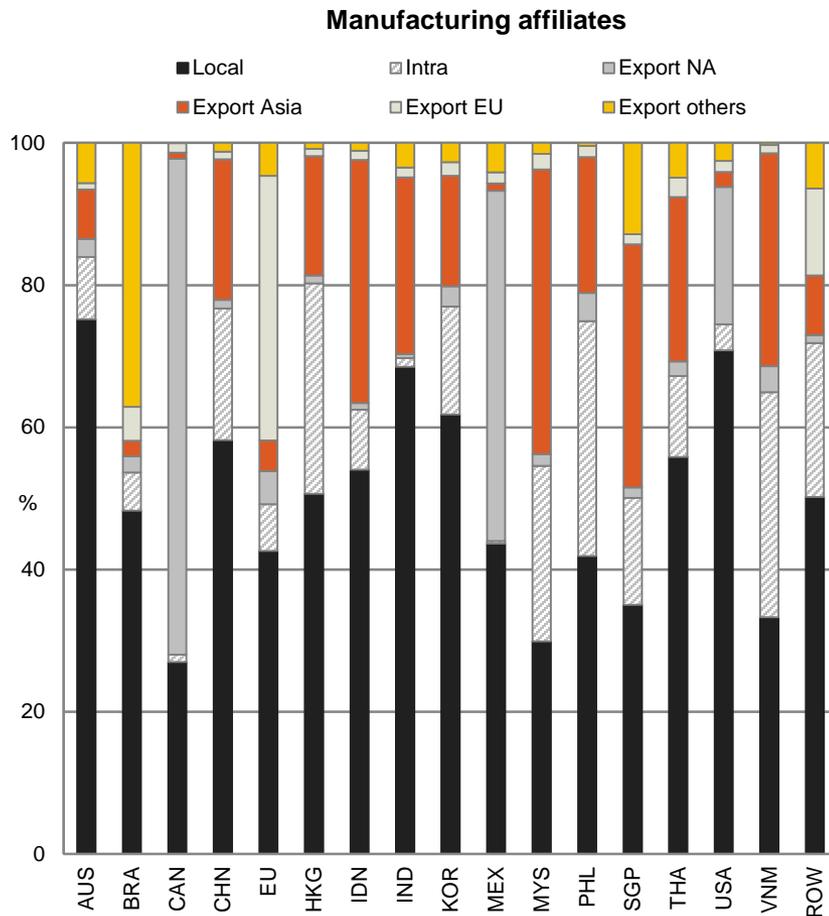
- **Services foreign affiliates are mostly set up to maximise proximity to final users**
 - In Canada, China, Indonesia, Vietnam more than 80% of Japanese affiliates sales are local
- **Some markets emerge as strategic bridgeheads to reach out to other countries in the region**
 - For ex., Brazil act as an export platform for Japanese MNEs by providing services to the rest of South America

Note: The shares show the percentage of sales of foreign affiliates that are destined to the local markets (local), to the parent (intra-firm) and to third countries or unrelated parties in the home country (export). The latter group is further decomposed into exports addressed to North America (export NA), Asia (export Asia), Europe (export EU) and other regions (export other).

Source: Own calculations based on the micro-data from the BSOBA, Japan METI

WHERE ARE THESE EXPORT PLATFORMS ?

Geographical breakdown of foreign affiliate sales, 2014, %



- Manufacturing affiliates are set up to sell **locally** in **remote locations** (Australia) or in very large markets (USA)
- Affiliates in goods-producing sectors are more likely to act as **export platforms**
- Some markets emerge as **strategic locations** to further sell in the region or more globally (Singapore)
- **Intra-firm trade** are large for affiliates in Vietnam and the Philippines

Note: The shares show the percentage of sales of foreign affiliates that are destined to the local markets (local), to the parent (intra-firm) and to third countries or unrelated parties in the home country (export). The latter group is further decomposed into exports addressed to North America (export NA), Asia (export Asia), Europe (export EU) and other regions (export other).

METHODOLOGY

- **GOAL:** explaining the underlying motives of Japanese FDI, differentiating by main industry and final destination
- **HOW:** discrete choice model that estimates the probability of observing international sales by Japanese firms in a given country for a given item at a given point in time:

$$P(X_{ict}^{S*} > 0) = \Phi(a + \beta_1 F_{it} + \beta_2 Z_{ct} + \beta_3 Y_c + \beta_4 W_{ct}^S + \varphi_s + \theta_t + \varepsilon_{ict}^S)$$

- **Potential determinants:**
 - **At the firm-level:**
 - Firm productivity, firm size and sector of primary activity
 - **At the host country-level:**
 - Market size, distance to Japan, presence (and content) of Free Trade Agreements, efficiency of customs procedures, corporate taxes, labour taxes and social contributions;
 - Human capital abundance (in skilled-labour intense industries);
 - Wages and labour market regulation;
 - Digital readiness and innovation;
 - Trade policy barriers to manufacturing and services foreign affiliates (tariffs & STRI)
- **The analysis is carried out on foreign affiliate sales by industry groups (no sector level regressions) and final destination (local, intra-firm, export), over the period 2008-2014**

MAIN ECONOMETRIC FINDINGS

- There are **mixed motives** for Japanese MNEs expansion abroad and, while there are some *common drivers*, there are also factors that differ depending on the final destination of affiliate sales
- Japanese MNEs are more likely to establish foreign affiliates to **sell locally** when the host market is
 - larger & more favourable to Japanese foreign investment
 - has lower labour-related costs
 - has lower trade restrictions
- Japanese companies that are active in more sophisticated industries are more likely to set up affiliates to **sell intra-firm** in countries with a skilled labour force. Distance is another important determinant of intra-firm trade.
- The largest and more productive parents are more likely to invest in **FDI-export platforms**. Host countries with efficient customs procedures are more likely to attract this type of FDI. However, high services trade and investment barriers strongly reduce a country's attractiveness for export platforms.

CONCLUSIONS

- The study analyses the **main patterns** and **underlying motives** for Japanese multinational activity exploiting a highly disaggregated dataset
- The **descriptive analysis** provides evidence of the broad investment patterns of Japanese MNEs
- The **econometric analysis** shed light on policy priorities for countries to attract and maximise the **benefits of FDI inflows**:
 - All three types of FDI are sources of employment, activity and technological spillovers to the host country
 - FDI directed towards the local market helps expand the variety of products and services available to consumers and businesses and lower their costs
 - FDI for intra-firm trade and FDI-export platforms bring benefits in terms of knowledge and skills needed to better integrate in GVCs
- Two **policy levers**: a) create a more favourable environment for FDI & trade; b) invest in skills and digital infrastructure

MUCHAS GRACIAS !

ANNEX

DESCRIPTIVE ANALYSIS – MAIN RESULTS

The descriptive analysis provides a set of stylised facts on Japanese MNEs investment patterns:

- High concentration – few large firms with a global footprint;
- Most of foreign affiliate sales originate in distribution services, mainly from Asian markets;
- Foreign services affiliates are primarily established to maximise their proximity to local customers, while goods-producing affiliates are more engaged with third countries;
- Still, some economies (Singapore; Hong Kong, China; the US; Brazil) emerge as strategic gateways to other destinations in the region, and more globally
- Different sourcing patterns: foreign affiliate in services source mostly from their parents, while manufacturing affiliates buy locally

MAIN FINDINGS - TOTAL AFFILIATE SALES

- Japanese FDI is not only driven by **market access motives**...
- ... factor endowment differences also play a role in shaping the distribution of Japanese FDI across countries, responding to **efficiency-seeking motives** or **comparative advantage motives**
- The probability of locating Japanese FDI in a given host market is higher for:
 - Larger and closer markets (particularly for manufacturing affiliates), with more efficient customs procedures and with who Japan has comprehensive FTAs;
 - Markets with lower average wages and more flexible employment protection laws;
 - Host countries with well-developed digital infrastructure and more innovative industries;
 - Skilled-labour abundant countries for investments in skill-intensive industries;
 - Countries with lower trade barriers (tariffs and services trade restrictions);
 - More productive and larger parents

MAIN FINDINGS – BREAKDOWN BY FINAL DESTINATION

- **Common drivers for all types of FDI:**

- Larger Japanese firms are more likely to invest in horizontal, vertical and export-platform FDI
- Gravity factors: closer (esp. for intra-firm trade) & larger host markets more likely to attract all types of FDI
- Comprehensive FTAs pay out by locking the status quo & pushing for better domestic policies
- Better connected markets help affiliates integrate into global networks
- Labour market institutions and wages matter across all kinds of FDI

- **Horizontal FDI (Local sales) is driven by:**

- Market size – firms tend to locate affiliates near the largest pools of potential customers
- Labour costs – more sensitive to higher wages and stiffer employment regulation
- Trade policy factors – more productive parents more likely to invest in markets that are more open to services but also in markets that impose higher tariffs (tariff-jumping motive)

- **Vertical FDI (Intra-firm trade) is more likely when the host countries:**

- Have an abundance of highly-educated workers for investments in skill-intensive industries
- Have a higher degree of industry-specific R&D spending - parents offshore innovative services inputs

- **Export-platforms FDI is more likely if:**

- The Japanese parent is larger and more productive (esp. in services sectors)
- Either the cost and efficiency of production conditions (labour, taxation, logistics, business environment), or
- The ease of access to the final destination market (e.g., proximity to regional demand centres, efficient custom procedures, more favorable regulatory environment for services trade)

MAIN DETERMINANTS OF TOTAL FOREIGN AFFILIATE SALES

Affiliates in →	Baseline		Labour costs		R&D intensity		Skill endowments	
	goods	services	goods	services	goods	services	goods	services
Lab prod (log)	0.029*** (0.011)	0.098*** (0.013)	0.029** (0.014)	0.102*** (0.017)	0.041** (0.019)	0.110*** (0.014)	0.036*** (0.012)	0.102*** (0.013)
Size (log)	0.136*** (0.019)	0.168*** (0.014)	0.153*** (0.028)	0.186*** (0.017)	0.229*** (0.025)	0.204*** (0.02)	0.154*** (0.021)	0.173*** (0.016)
Main activity in goods	0.199*** (0.034)	-0.160** (0.074)	0.233*** (0.04)	-0.151 (0.11)	0.272*** (0.069)	0.115*** (0.042)	0.238*** (0.046)	-0.112 (0.073)
Distance (log)	-0.731*** (0.195)	-0.585*** (0.19)	-0.575*** (0.082)	-0.459*** (0.064)	-0.143** (0.056)	-0.178** (0.081)	-0.185 (0.173)	-0.162 (0.137)
GDP (log)	0.448*** (0.098)	0.397*** (0.09)	0.502*** (0.041)	0.510*** (0.033)	0.413*** (0.054)	0.466*** (0.042)	0.109 (0.072)	0.209** (0.085)
FTA depth	0.253*** (0.079)	0.169*** (0.063)	0.145** (0.063)	0.128*** (0.048)	-0.063 (0.063)	0.040 (0.071)	0.186** (0.079)	0.080 (0.08)
LPI customs	0.223 (0.147)	0.604*** (0.114)	1.193*** (0.175)	1.004*** (0.164)	-0.848*** (0.271)	-0.041 (0.368)	0.006 (0.359)	0.326 (0.22)
Corporate tax diff	-0.011 (0.012)	-0.002 (0.007)	-0.003 (0.005)	-0.008* (0.004)	-0.009 (0.006)	-0.016*** (0.005)	-0.003 (0.012)	-0.002 (0.012)
Labour tax diff	-0.011 (0.008)	0.002 (0.007)	-0.017*** (0.003)	-0.010*** (0.004)	0.010** (0.004)	0.008* (0.004)	0.020** (0.008)	0.027*** (0.008)
Wage (log)			-0.752*** (0.117)	-0.455*** (0.08)				
EPL			-0.555*** (0.067)	-0.405*** (0.083)				
R&D Exp sh GO					5.902** (2.327)	9.901** (4.275)		
Broadband coverage					0.017** (0.007)	0.018* (0.010)		
Skill Lab Int							-3.047 (2.188)	0.386 (0.444)
HC							-0.004 (0.01)	0.001 (0.005)
HC * Skill Lab int							0.055* (0.032)	0.003 (0.005)
Constant	-3.737 (2.426)	-5.677** (2.286)	-2.538** (1.063)	-5.721*** (0.934)	-5.879*** (0.716)	-9.538*** (0.744)	-3.079 (1.932)	-5.884*** (1.789)
Observations	706,098	590,838	531,395	443,500	385,837	311,016	539,512	452,561
R-squared	0.264	0.218	0.375	0.308	0.272	0.262	0.171	0.183
Time FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES

Note: The figures above are estimated coefficients from the probit regressions (not the marginal effects). The panel goes from 2008 to 2014. Dependent variable is a binary indicator for foreign affiliate sales. The standard errors, reported below the estimated coefficients, are clustered by host economy. ***, ** and * mean statistical significance at 1%, 5% and 10% levels respectively.

Source: Own calculations based on the micro-data from the BSOBA, Japan METI

IMPACT OF TRADE BARRIERS ON TOTAL FOREIGN AFFILIATE SALES

Tariffs

	Affiliates in goods		
Tariff	0.005	0.000	0.018
	(0.008)	(0.011)	(0.011)
Tariff * Firm size		0.001	
		(0.001)	
Tariff * Firm lab prod			-0.003***
			(0.001)
Observations	584,944	584,944	584,944
R-squared	0.27	0.27	0.27
Time FE	YES	YES	YES
Industry FE	YES	YES	YES

Note: The figures above are estimated coefficients from the probit regressions (not the marginal effects). The panel goes from 2008 to 2014. Dependent variable is a binary indicator for foreign affiliate sales. The standard errors, reported below the estimated coefficients, are clustered by host economy. ***, ** and * mean statistical significance at 1%, 5% and 10% levels respectively.

Source: Own calculations based on the micro-data from the BSOBA, Japan METI

Services trade and investment barriers

	Affiliates in services		
STRI score	0.207	-0.652	-1.833**
	(0.263)	(0.639)	(0.858)
STRI score * Firm size		0.124	
		(0.113)	
STRI score * Firm lab prod			0.421**
			(0.177)
Observations	29,912	29,912	29,912
R-squared	0.127	0.127	0.129
Time FE	YES	YES	YES
Industry FE	YES	YES	YES

MAIN DETERMINANTS OF FOREIGN AFFILIATE SALES BY FINAL DESTINATION - BASELINE

	Local		Intra-firm trade		Exports to third countries	
	Affiliates in goods	Affiliates in services	Affiliates in goods	Affiliates in services	Affiliates in goods	Affiliates in services
Lab prod (log)	0.024** (0.012)	0.086*** (0.011)	-0.002 (0.016)	0.101*** (0.013)	0.033** (0.013)	0.143*** (0.010)
Size (log)	0.117*** (0.018)	0.146*** (0.014)	0.085*** (0.024)	0.131*** (0.014)	0.132*** (0.017)	0.165*** (0.014)
Main activity in goods	0.198*** (0.034)	-0.144** (0.073)	0.171*** (0.036)	-0.200*** (0.068)	0.187*** (0.052)	-0.038 (0.067)
Distance (log)	-0.696*** (0.174)	-0.567*** (0.175)	-0.701*** (0.162)	-0.566*** (0.155)	-0.551*** (0.139)	-0.431*** (0.146)
GDP (log)	0.456*** (0.086)	0.395*** (0.083)	0.367*** (0.092)	0.335*** (0.086)	0.343*** (0.072)	0.272*** (0.072)
FTA depth	0.255*** (0.076)	0.172*** (0.060)	0.238*** (0.075)	0.147** (0.063)	0.219*** (0.060)	0.137** (0.055)
LPI customs	0.244* (0.137)	0.588*** (0.099)	0.237 (0.148)	0.630*** (0.119)	0.251** (0.123)	0.731*** (0.118)
Corporate tax diff	-0.011 (0.012)	-0.003 (0.007)	-0.010 (0.012)	-0.004 (0.007)	-0.009 (0.010)	-0.002 (0.007)
Labour tax diff	-0.009 (0.007)	0.002 (0.006)	-0.011 (0.008)	0.001 (0.006)	-0.006 (0.006)	0.004 (0.006)
Constant	-4.183* (2.201)	-5.599*** (2.104)	-2.727 (2.280)	-5.594*** (2.071)	-4.164** (1.851)	-6.956*** (1.850)
Observations	706,098	590,838	706,098	589,970	706,098	590,754
R-squared	0.255	0.211	0.231	0.205	0.188	0.199
Time FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Note: The figures above are estimated coefficients from the probit regressions (not the marginal effects). The panel goes from 2008 to 2014. Dependent variable is a binary indicator for foreign affiliate sales, broken down by final destination market. The standard errors, reported below the estimated coefficients, are clustered by host economy. ***, ** and * mean statistical significance at 1%, 5% and 10% levels respectively.

Source: Own calculations based on the micro-data from the BSOBA, Japan METI

MAIN DETERMINANTS OF FOREIGN AFFILIATE SALES BY FINAL DESTINATION – LABOUR COSTS

	Local		Intra-firm trade		Exports to third countries	
	Affiliates in goods	Affiliates in services	Affiliates in goods	Affiliates in services	Affiliates in goods	Affiliates in services
Lab prod (log)	0.025 (0.016)	0.086*** (0.015)	-0.003 (0.022)	0.106*** (0.016)	0.032* (0.018)	0.147*** (0.011)
Size (log)	0.126*** (0.025)	0.153*** (0.018)	0.094*** (0.035)	0.144*** (0.020)	0.143*** (0.023)	0.178*** (0.018)
Main activity in goods	0.229*** (0.041)	-0.117 (0.105)	0.200*** (0.046)	-0.185* (0.103)	0.202*** (0.066)	-0.025 (0.097)
Distance (log)	-0.549*** (0.077)	-0.445*** (0.063)	-0.549*** (0.068)	-0.452*** (0.043)	-0.425*** (0.064)	-0.300*** (0.047)
GDP (log)	0.481*** (0.038)	0.488*** (0.032)	0.440*** (0.036)	0.446*** (0.031)	0.379*** (0.033)	0.367*** (0.029)
FTA depth	0.147** (0.065)	0.134*** (0.048)	0.162** (0.063)	0.116** (0.047)	0.160*** (0.049)	0.125*** (0.040)
LPI customs	1.103*** (0.172)	0.975*** (0.165)	1.108*** (0.194)	0.926*** (0.144)	0.959*** (0.159)	0.853*** (0.167)
Corporate tax diff	-0.005 (0.005)	-0.007* (0.004)	-0.002 (0.006)	-0.013*** (0.005)	-0.003 (0.005)	-0.010* (0.005)
Labour tax diff	-0.015*** (0.003)	-0.008** (0.004)	-0.013*** (0.003)	-0.007* (0.004)	-0.010*** (0.003)	-0.005 (0.004)
Wage	-0.687*** (0.111)	-0.433*** (0.079)	-0.628*** (0.116)	-0.352*** (0.063)	-0.523*** (0.092)	-0.256*** (0.064)
EPL	-0.514*** (0.075)	-0.374*** (0.085)	-0.425*** (0.062)	-0.257*** (0.086)	-0.394*** (0.057)	-0.201** (0.084)
Constant	-2.620** (1.023)	-5.415*** (0.947)	-2.555** (1.025)	-6.195*** (0.876)	-3.542*** (0.896)	-7.744*** (0.831)
Observations	531,395	443,500	531,395	442,849	531,395	442,849
R-squared	0.348	0.290	0.327	0.283	0.261	0.241
Time FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Note: The figures above are estimated coefficients from the probit regressions (not the marginal effects). The panel goes from 2008 to 2014. Dependent variable is a binary indicator for foreign affiliate sales, broken down by final destination market. The standard errors, reported below the estimated coefficients, are clustered by host economy. ***, ** and * mean statistical significance at 1%, 5% and 10% levels respectively.

Source: Own calculations based on the micro-data from the BSOBA, Japan METI

MAIN DETERMINANTS OF FOREIGN AFFILIATE SALES BY FINAL DESTINATION – R&D INTENSITY

	Local		Intra-firm trade		Exports to third countries	
	Affiliates in goods	Affiliates in services	Affiliates in goods	Affiliates in services	Affiliates in goods	Affiliates in services
Lab prod (log)	0.046*** (0.018)	0.079*** (0.015)	0.024 (0.019)	0.121*** (0.015)	0.037 (0.028)	0.131*** (0.011)
Size (log)	0.195*** (0.020)	0.176*** (0.021)	0.198*** (0.022)	0.162*** (0.016)	0.210*** (0.016)	0.197*** (0.017)
Main activity in goods	0.293*** (0.062)	0.143*** (0.043)	0.292*** (0.076)	0.057 (0.043)	0.244*** (0.084)	0.194*** (0.066)
Distance (log)	-0.149*** (0.057)	-0.174** (0.079)	-0.209*** (0.057)	-0.339*** (0.070)	-0.089 (0.056)	-0.160** (0.068)
GDP (log)	0.417*** (0.049)	0.450*** (0.038)	0.340*** (0.041)	0.447*** (0.033)	0.342*** (0.045)	0.363*** (0.030)
FTA depth	-0.07 (0.060)	0.026 (0.067)	-0.07 (0.057)	0.152** (0.063)	-0.034 (0.054)	0.095 (0.063)
LPI customs	-0.812*** (0.254)	-0.048 (0.346)	-0.559** (0.276)	0.455 (0.324)	-0.655** (0.270)	0.384 (0.314)
Corporate tax diff	-0.009 (0.006)	-0.014*** (0.005)	-0.009 (0.006)	-0.014*** (0.005)	-0.006 (0.006)	-0.013** (0.006)
Labour tax diff	0.009** (0.004)	0.008** (0.004)	0.006 (0.004)	0.004 (0.004)	0.007* (0.004)	0.003 (0.004)
R&D Exp sh GO	5.049** (2.103)	3.886 (3.925)	6.511*** (2.244)	11.378*** (3.985)	4.124** (2.091)	6.024 (4.981)
Broadband coverage	0.018** (0.007)	0.017* (0.010)	0.016* (0.009)	0.012 (0.009)	0.018** (0.009)	0.014* (0.009)
Constant	-5.926*** (0.687)	-8.960*** (0.709)	-5.313*** (0.591)	-9.977*** (0.683)	-6.206*** (0.664)	-10.545*** (0.683)
Observations	385837	311016	385837	309478	385837	305414
R-squared	0.26	0.248	0.246	0.249	0.224	0.241
Time FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Note: The figures above are estimated coefficients from the probit regressions (not the marginal effects). The panel goes from 2008 to 2014. Dependent variable is a binary indicator for foreign affiliate sales, broken down by final destination market. The standard errors, reported below the estimated coefficients, are clustered by host economy. ***, ** and * mean statistical significance at 1%, 5% and 10% levels respectively.

Source: Own calculations based on the micro-data from the BSOBA, Japan METI

MAIN DETERMINANTS OF FOREIGN AFFILIATE SALES BY FINAL DESTINATION – SKILL ENDOWMENTS

	Local		Intra-firm trade		Exports to third countries	
	Affiliates in goods	Affiliates in services	Affiliates in goods	Affiliates in services	Affiliates in goods	Affiliates in services
Lab prod (log)	0.035*** (0.012)	0.086*** (0.014)	0.015 (0.011)	0.106*** (0.014)	0.044*** (0.014)	0.142*** (0.012)
Size (log)	0.133*** (0.018)	0.154*** (0.014)	0.112*** (0.020)	0.139*** (0.014)	0.149*** (0.016)	0.172*** (0.015)
Main activity in goods	0.246*** (0.044)	-0.098 (0.076)	0.219*** (0.046)	-0.144* (0.074)	0.248*** (0.052)	-0.005 (0.077)
Distance (log)	-0.114 (0.173)	-0.140 (0.128)	-0.277* (0.154)	-0.224* (0.120)	-0.104 (0.144)	-0.146 (0.121)
GDP (log)	0.128* (0.071)	0.201** (0.079)	0.058 (0.067)	0.179** (0.077)	0.085 (0.066)	0.153** (0.071)
FTA depth	0.190** (0.080)	0.101 (0.079)	0.198*** (0.072)	0.035 (0.075)	0.190*** (0.069)	0.055 (0.078)
LPI customs	-0.024 (0.356)	0.339 (0.208)	0.286 (0.332)	0.291 (0.227)	0.171 (0.329)	0.500** (0.210)
Corporate tax diff	-0.003 (0.012)	-0.001 (0.012)	0.001 (0.012)	-0.003 (0.013)	0.003 (0.012)	-0.001 (0.012)
Labour tax diff	0.022** (0.009)	0.026*** (0.008)	0.017** (0.008)	0.026*** (0.008)	0.018*** (0.007)	0.022*** (0.007)
Skill Lab Int	-2.032 (2.054)	0.252 (0.393)	-4.394** (1.942)	0.649 (0.582)	-2.623 (1.973)	0.496 (0.487)
HC	0.001 (0.009)	0.003 (0.005)	-0.009 (0.008)	0.000 (0.004)	-0.002 (0.008)	-0.000 (0.005)
HC * Skill Lab int	0.036 (0.031)	0.003 (0.005)	0.073*** (0.028)	0.000 (0.007)	0.044 (0.028)	0.002 (0.006)
Constant	-4.083** (1.863)	-5.945*** (1.641)	-2.159 (1.599)	-5.264*** (1.624)	-4.380*** (1.677)	-6.988*** (1.587)
Observations	539,512	452,561	539,512	451,955	539,512	452,561
R-squared	0.166	0.176	0.144	0.177	0.149	0.194
Time FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Note: The figures above are estimated coefficients from the probit regressions (not the marginal effects). The panel goes from 2008 to 2014. Dependent variable is a binary indicator for foreign affiliate sales, broken down by final destination market. The standard errors, reported below the estimated coefficients, are clustered by host economy. ***, ** and * mean statistical significance at 1%, 5% and 10% levels respectively.

Source: Own calculations based on the micro-data from the BSOBA, Japan METI

IMPACT OF TRADE BARRIERS ON FOREIGN AFFILIATE SALES BY FINAL DESTINATION

Tariffs (affiliates in manufacturing sectors)

	Local			Intra-firm trade			Exports to third countries		
Tariff	0.006 (0.008)	0.002 (0.012)	0.019* (0.011)	0.002 (0.008)	0.013 (0.013)	0.015* (0.009)	0.004 (0.007)	0.006 (0.010)	0.016* (0.008)
Tariff* Firm size		0.001 (0.001)			-0.002 (0.002)			-0.000 (0.001)	
Tariff* Firm lab prod			-0.003*** (0.001)			-0.003** (0.001)			-0.003*** (0.001)
Observations	584,944	584,944	584,944	584,944	584,944	584,944	584,944	584,944	584,944
R-squared	0.259	0.259	0.259	0.236	0.236	0.236	0.194	0.194	0.194
Time FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Services trade and investment barriers (affiliates in services sectors)

	Local			Intra-firm trade			Exports to third countries		
STRI score	0.408* (0.234)	0.735 (0.737)	-1.867*** (0.444)	-0.100 (0.331)	-0.508 (0.430)	-0.120 (0.627)	-0.697* (0.409)	-1.952* (1.066)	-2.782*** (0.829)
STRI score * Firm size		-0.047 (0.113)			0.060 (0.066)			0.184 (0.140)	
STRI score* Firm lab prod			0.472*** (0.074)			0.004 (0.127)			0.431*** (0.131)
Observations	29,912	29,912	29,912	29,912	29,912	29,912	29,912	29,912	29,912
R-squared	0.113	0.114	0.116	0.0573	0.0573	0.0573	0.0542	0.0548	0.0562
Time FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Note: The figures above are estimated coefficients from the probit regressions (not the marginal effects). The panel goes from 2008 to 2014. Dependent variable is a binary indicator for foreign affiliate sales, broken down by final destination market. The standard errors, reported below the estimated coefficients, are clustered by host economy. ***, ** and * mean statistical significance at 1%, 5% and 10% levels respectively.

Source: Own calculations based on the micro-data from the BSOBA, Japan METI